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MasterPad

DISTRIBUTOR MANUAL

MasterPad Distributor Manual

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Disclaimer

This manual contains instructions for installation and use of the ALE MasterPad controller. Read it carefully before performing any manipulation.

All information written in this Distributor Manual was correct at the time indicated in the version table below. However, the continual enhancement of our products may result in some differences existing between the information contained in this document and your equipment.

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Version history:

Date:	Revision:	Modifications:	Author:
19/01/10	First version		AF
18/06/10	#1	Minor corrections	AF

Warnings

The ALE MasterPad is an electric device, and as such, basic safety precautions should always be followed, including the following:

- to protect against fire and electric shock, do not place cord, plugs or device in water or other liquid.
- Do not operate the device if the cord or plug is damaged
- Do not operate the device after a suspicious malfunction or if damaged
- Electrical equipment can be hazardous : ensure a good quality and earthed supply
- Do not use the device for other than intended use

1. Description

The ALE MasterPad controller is designed to control from one to eight ALE inkjet print-heads (their intended use is described in their own user manual). It can also be connected with devices compatible with the description given in fig. 2. Using this controller outside of its intended use range can result in damages. Please contact ALE for any question.

1. Contents of the box

1x MasterPad

1x power supply cord

1x mounting bracket

1x CD-Rom with Codex software and manuals

2. Specifications

Stainless steel enclosure
IP64 on 5 sides
3 status LEDs (On, Ready, Alarm)
CPU: Intel Xscale PXA270 at 312MHz
RAM: 64MB SDRAM
Storage memory:128MB (32MB for message storage)
Screen: 3,5" 320x240p touch sensitive
Wifi Antenna : yes (not activated yet)
1x USB Host port (for USB memory key or keyboard)
1x Ethernet 10/100 baseT RJ45 port
1x Photocell connector
1x RS232 9pin male port
1x AUX 15pin female port
1x encoder 9pin female port
2, 4 or 8 IEEE1394 "hot-pluggable" print-head connectors
Option : RS232#2, Encoder#2, Photocell#2

3. Power

Power requirements : 75W 90/250VAC 50-60Hz.
Recommended fuse : 2A anti-surge.

4. Dimensions and weight

Dimensions:
Length : 300mm
Width : 200mm
Height : 115mm

Weight : 3,1kg

5. Operating conditions

Operating conditions:
Humidity range : 5 to 65% RHL
Temperature range : +5 to +40° Centigrade

Ensure an air gap of 3,5mm between the base and the mounting surface for heat dissipation

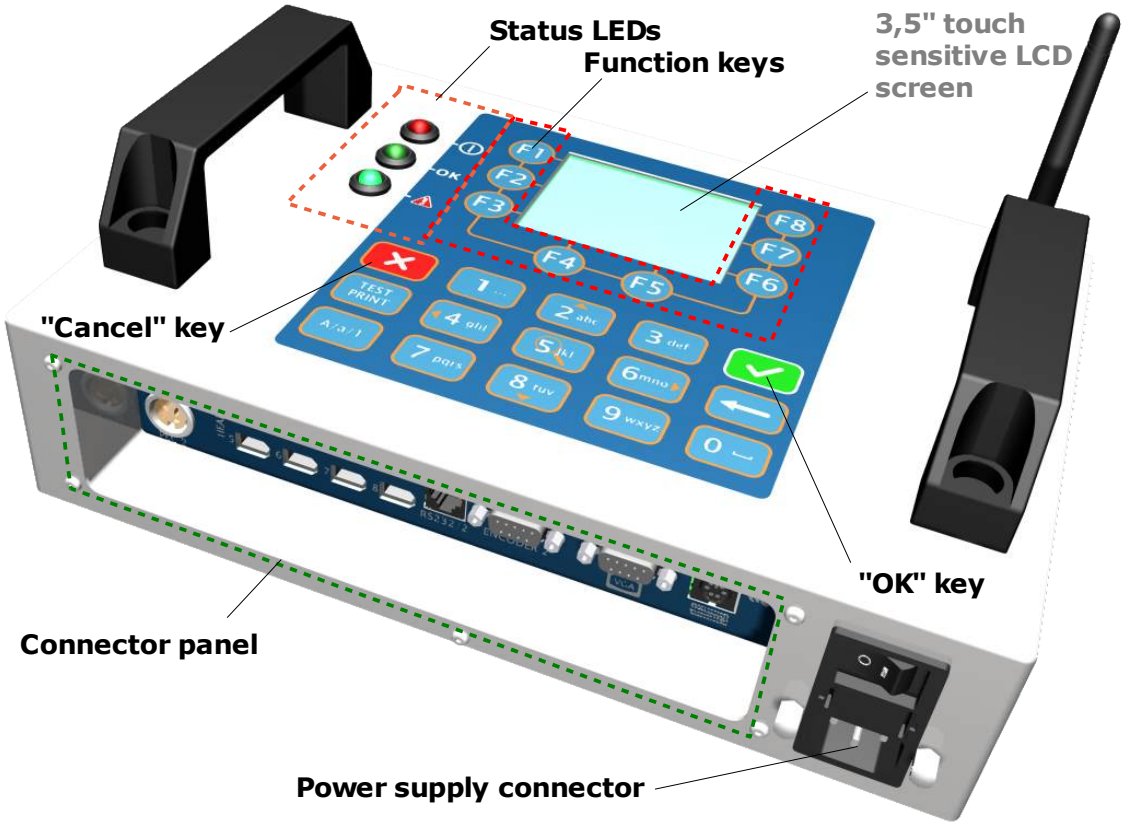
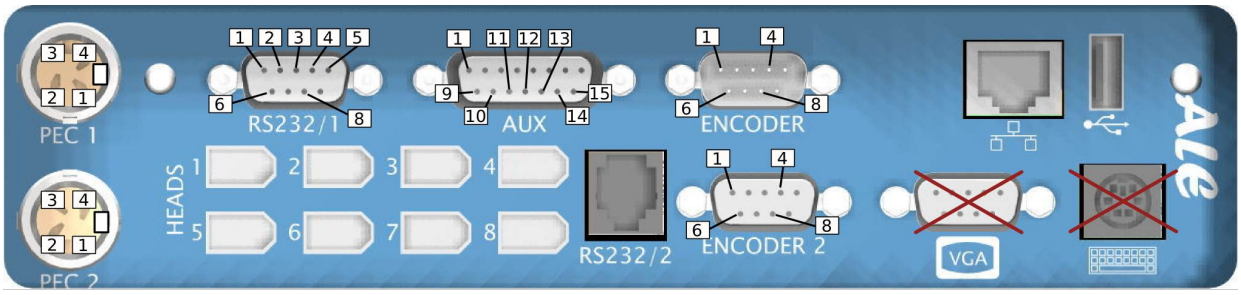


fig. 1: MasterPad controller description



PEC#1, PEC#2[**]
photocell, 12 to 24v. NPN or PNP type

1 0V*
2 12V/0.5A
3 NPN input (0v = print)
4 PNP input (12v to 24v = print)

RS232#1

1 DCD output (always 1)
2 TXD output
3 RXD input
4 DSR input
5 0V *
6 DTR output
8 RTS output

RS232#2[**]

requires cable option

Encoder#1, Encoder#2[**]

1 12V/0.5A
4 Channel B (NPN)
6 0V *
8 Channel A (NPN)

Aux

1 12V/0.5A
9 0V *
10 Alarm-Normally Closed
11 Alarm Common
12 Alarm-Normally Opened
13 Ready-Normally Closed
14 Ready Common
15 Ready-Normally Opened

Alarm/Ready specification:
Contact rating: 30V/2A, floating
Type : Omron G5V2-2-HI 12DC

Ethernet

RJ45-10/100baseT (IEEE 802.3)

* 0V is internally connected to Ground

** grouped option

fig. 2: MasterPad connector panel

2. Installation

Note : before installing the system on a production line, do a test setup on a bench or a table to ensure that everything works correctly.

1. Enclosure mounting

The MasterPad can be mounted on a vertical mast along the conveyor using the included bracket(fig. 3). This bracket is compatible with Norcan® 90mm wide profile (45mm between mounting rails).

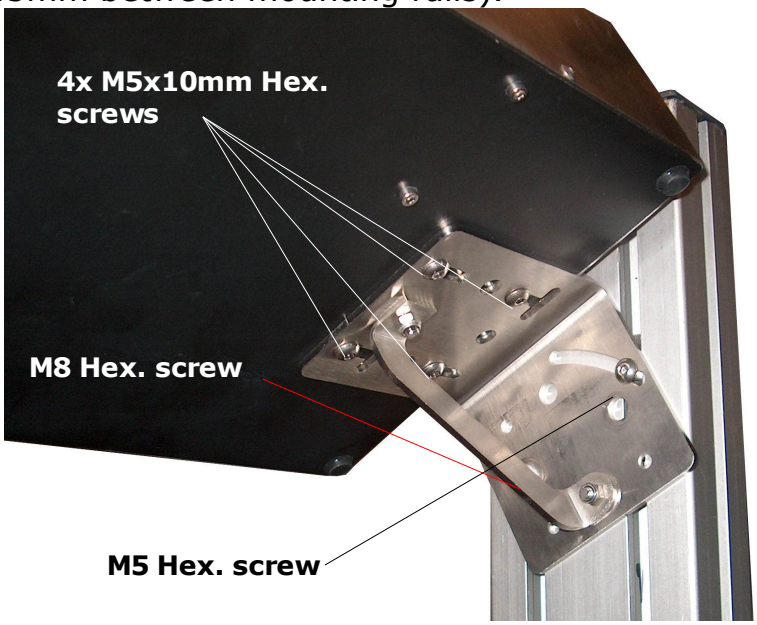


fig. 3: MasterPad mounting

Alternatively the MasterPad can be mounted in a custom way using the mounting M5 holes under the enclosure (dimensions given in fig. 4)

Ensure an air gap of 3,5mm between the base and the mounting surface for heat dissipation.

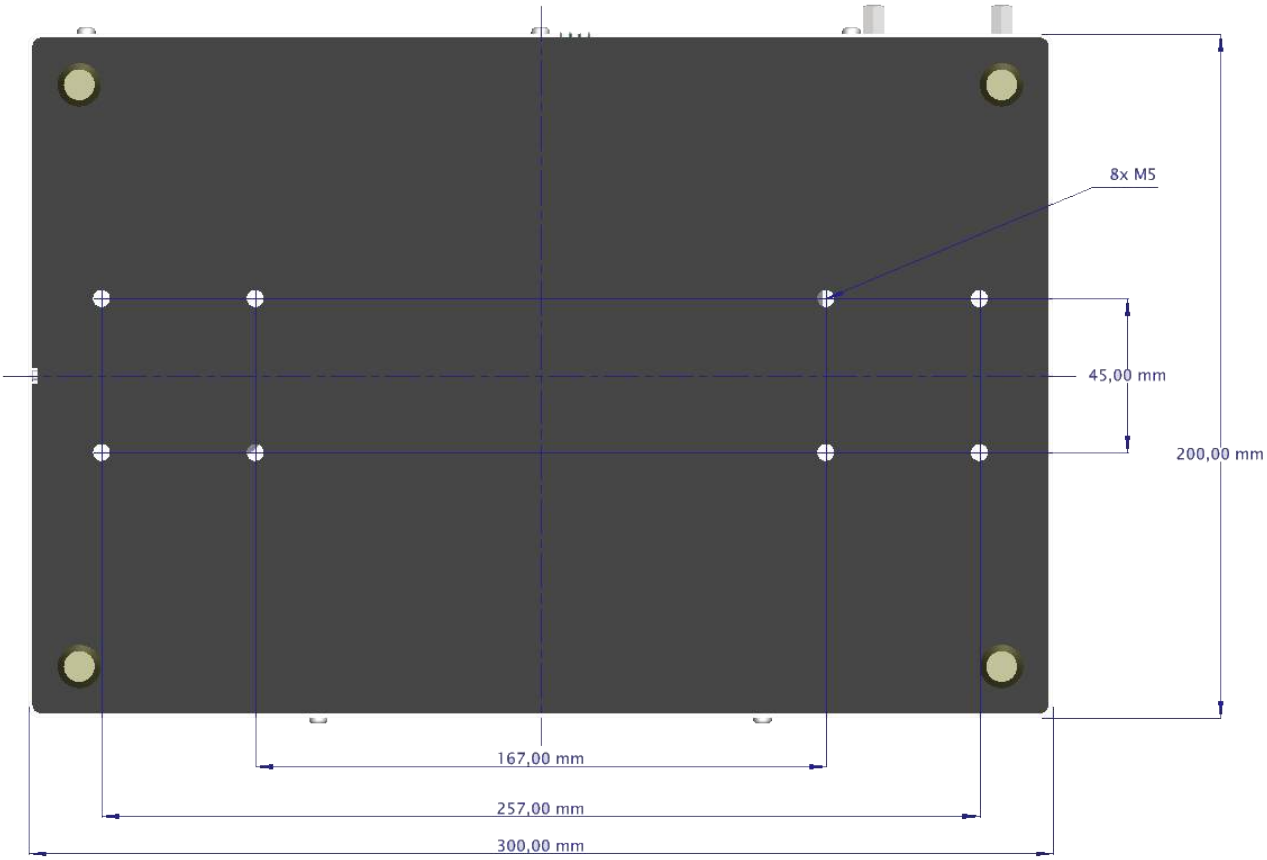


fig. 4: MasterPad base dimensions

2. Photocell and encoder

The photocell and encoder should be mounted along the production line as described for example in **Z-series Operator Manual** (section 3.3.1).

3. Print-heads

Please refer to the user manual of the ALE print-head to be used with the MasterPad : it contains information regarding installation, printing heights, inks etc...
The print-head is connected to the MasterPad via a standard 6-pin IEEE1394 cable (fig. 5). One of the features of the IEEE1394 standard is that it is possible to disconnect or reconnect a print-head while the controller is running without risking damaging it ("Hot connect" feature).

The IEEE1394 connectors of the MasterPad are used in a specific way, which does not follow the FireWire standard. Therefore, the IEEE1394 connectors can be used **ONLY** to connect ALE compatible print-heads. Trying to connect any other device with an IEEE1394 cable might damage it!

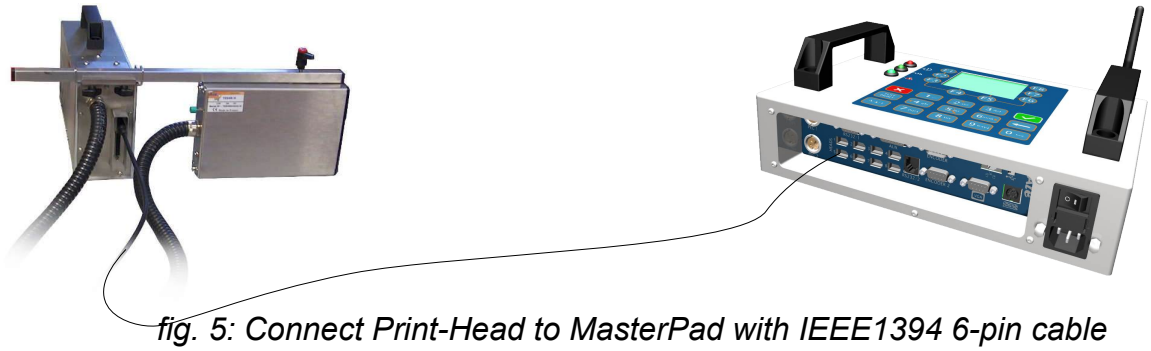


fig. 5: Connect Print-Head to MasterPad with IEEE1394 6-pin cable

4. Power supply

The MasterPad needs an IEC compatible power cord. Before plugging in the controller, please refer to the specifications regarding power requirements.

3. Controller use

1. Navigation overview

The MasterPad has a tactile 3,5" screen, rounded by a keypad. The keypad has function keys (F1 to F8) around the screen to select items on the screen. The keypad also has keys to enter or delete characters. See illustration on fig. 6.

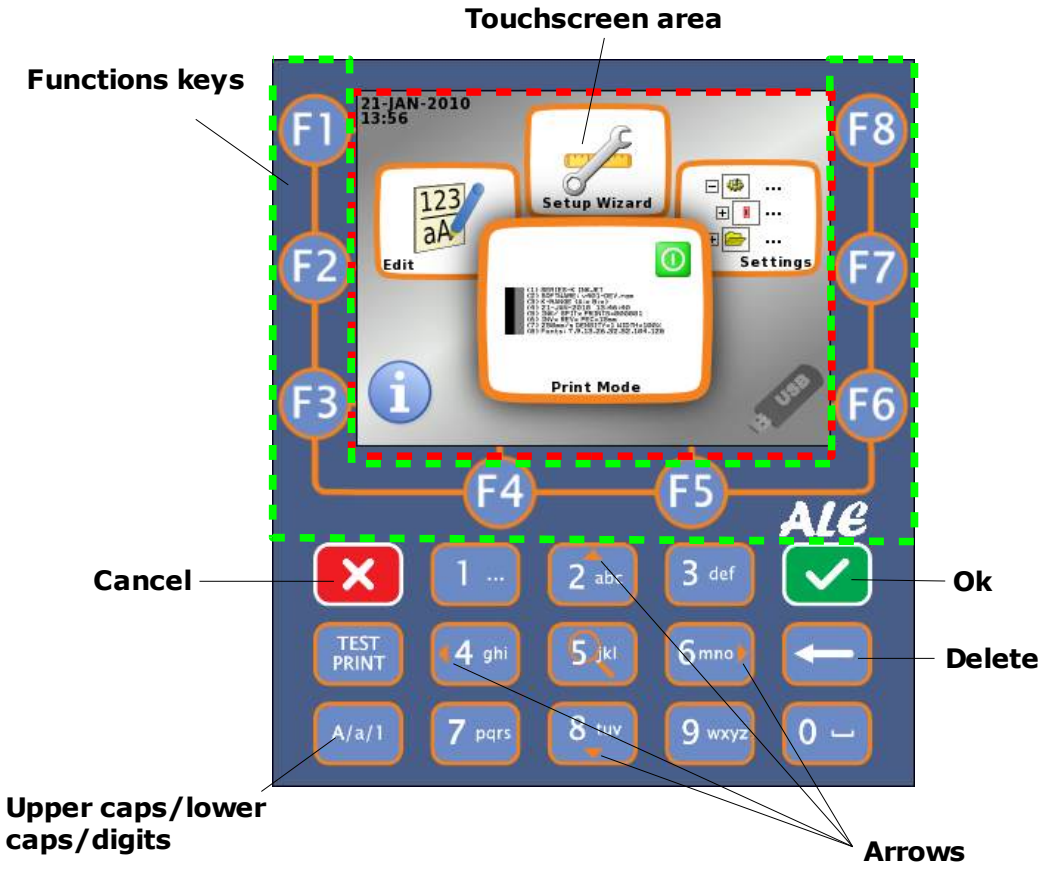


fig. 6: MasterPad keypad and touchscreen

Items on the screen can be selected either by touching them or pressing the function key next to it (fig. 7).

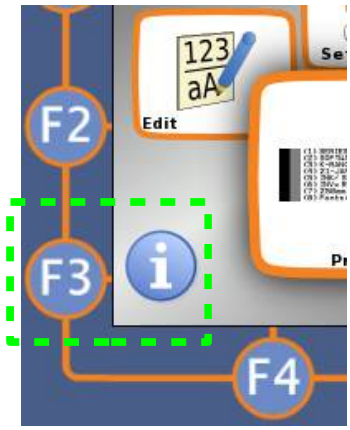


fig. 7: Example : to go into "info", either press F3 or touch the "i" icon on the screen

In any situation, pressing the "Cancel" key will bring you back to the previous menu and cancel the current action.

In the main menu, the icon gives access to information about the controller. In any other screen where this icon appears, it gives access to contextual help.

A diagram of all the menus is available in fig. 15

2. Setup Wizard

To ease the installation of a printing system driven by a MasterPad, a Setup Wizard is accessible from the main screen(fig. 8).
This wizard is designed to set all the basic settings in one operation. Please refer to the demo video called MasterPad_Setup_Wizard.htm in the directory

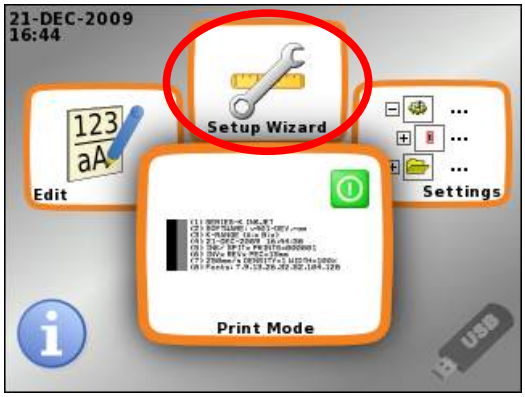


fig. 8: Begin the setup wizard process

"MasterPad videos" in the documentation section of the CD-ROM or on ALE's website (click here).

3. Load a CodeX file via USB

Codex files created on a Windows PC can be transferred to the MasterPad via a USB memory key. Please refer to the demo video called MasterPad_Load_file_from_USB.htm in the directory "MasterPad videos" in the documentation section of the CD-ROM or on ALE's website (click here).

4. Load a CodeX file via Ethernet

Codex files created on a Windows PC can be transferred to the MasterPad via the network. Please refer to the demo video called MasterPad_Load_file_from_Ethernet.htm in the directory "MasterPad videos" in the documentation section of the CD-ROM or on ALE's website (click here).

5. Purging and inking

Please refer to the manual of the print-head to be used with the MasterPad.
The MasterPad has a purge menu, similar to the one of the J-series. To access it, first go to the "Print Mode" menu on the main screen (fig. 6). In that menu select a message then touch the arrow or press F5. On the appearing screen, the purge menu is accessed by touching its icon or pressing F6.

The functions of this menu are the same as in the J-series controller.

4. Reference

1. Info screen

The info screen contains information regarding the status of the MasterPad (memory usage, IP address, serial number, options, connected heads...). It can be accessed by touching the icon or pressing F3 on the main screen(fig. 9).

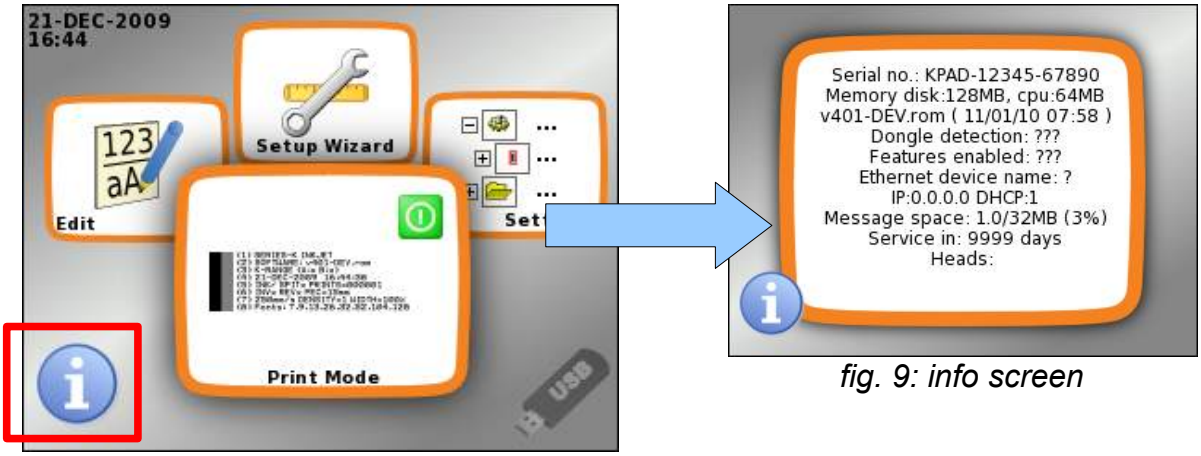


fig. 9: info screen

2. Edit tool

It is a tool created to allow basic messages editing directly on the MasterPad. Please refer to the demo video called Edit_menu.htm in the directory "MasterPad videos" in the documentation section of the CD-ROM or on ALE's website (click here).

3. USB Keyboard

The MasterPad has a host USB port that can be used either to connect a memory key, or a USB keyboard. The keyboard can be used to enter text and navigate through the menus, using F1 to F8. The "return" key does the same as and "Esc" acts as .Everything can be commanded from the USB keyboard, except test print.
When a USB keyboard is connected, an icon shows it on the main screen(fig. 10).

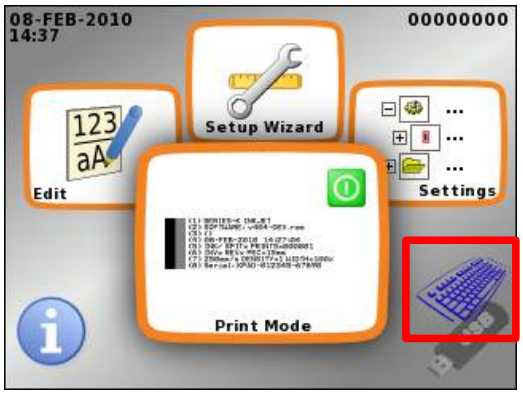


fig. 10: USB keyboard connected

4. CodeLoad

As in the J-series, it is a function to update the MasterPad software. Please refer to the technical bulletin TB061D available from ALE's website (distributors section).

5. Hot plugging capabilities

With the MasterPad, compatible ALE print-heads are now connected using a 6 pin female IEEE1394 cable.
With this standard it is possible to plug or unplug a print-head from the controller even while it is powered, without any risk to the print-head or the controller. The MasterPad software instantly detects changes in the print-head(s) configuration.
USB devices that can be plugged into the MasterPad can also be connected and removed at will.

This capability does not apply to other devices that can be connected to the MasterPad (photocell, RS232...).

The IEEE1394 connectors of the MasterPad are used in a specific way, which does not follow the FireWire standard. Therefore, the IEEE1394 connectors can be used **ONLY** to connect ALE compatible print-heads. Trying to connect any other device with an IEEE1394 cable might damage it!

6. Network configuration

The MasterPad can be connected to a TCP/IP network via its Ethernet connection. The network settings are in Settings > Installation functions > I/O, Ethernet, RS232, LCD.

7. Direct connection to a PC via Ethernet

The MasterPad can be connected directly to a PC using a cross RJ45 cable and its Ethernet connection. In that case it is needed to set DHCP (automatic IP address) OFF in both the PC and MasterPad, and set fixed IP addresses in both the MasterPad and PC. This action is suited for experienced users. Please refer to the PC documentation for instructions on operating without a DHCP server.

8. Print-head configuration screen

This screen is part of the setup wizard process. It is a screen with two tables. The left one shows the list of print-heads connected to the MasterPad controller (the list is populated while the MasterPad scans all the ports). In the right tab is a list of configurations to choose from.
The sign ⚠ shows that the selected configuration does not match detected print-heads (fig. 11). This sign can be ignored in cases where print-heads have been temporarily removed.

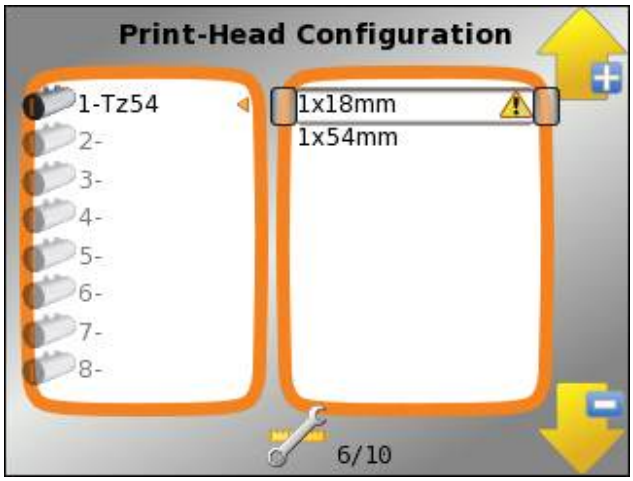


fig. 11: Print-head configuration screen (the current selected configuration is "1x18mm", and 1x54mm is recommended)

9. Wifi

The MasterPad comes with a Wifi antenna. The Wifi functions are not implemented yet and will be in the future.

10. Dongle

Some options (EntriX, VerifiX and RiX) are not activated by default. To activate any or a combination of these options, it is necessary to plug a USB dongle into the MasterPad. It can be connected into the external USB port or an internal one (please refer to technical bulletin TB062P for the mounting procedure). This leaves the external USB port free for another USB device. No dongle is required for default operation.

11. Menu Customisation

This feature is not implemented yet.

12. Ink low detection

When a print-head sends an ink-low detection message to the controller, the red ALARM LED (fig. 1) is turned on, and a sign is shown in the home screen(fig. 12). The Print Mode screen also shows an icon indicating which print-head(s) sent the alarm (fig. 13). If the print-head timeout is reached, the icon changes to red and the printing is suspended(fig. 14).

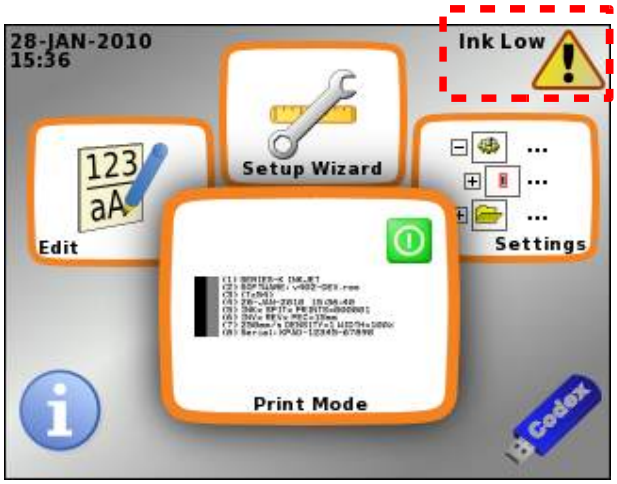


fig. 12: Ink low icon on the home screen

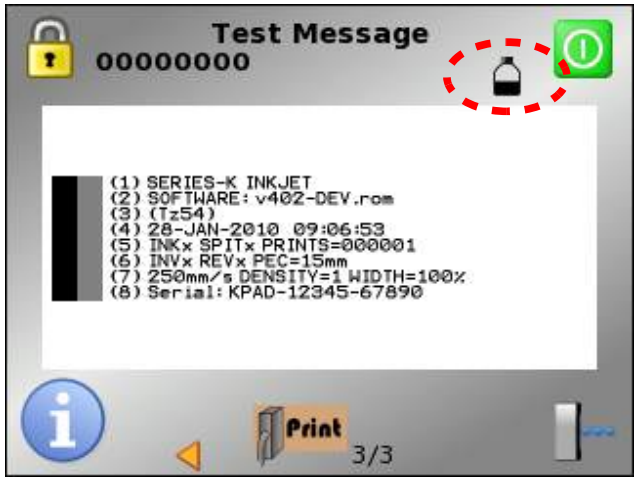


fig. 13: Ink low detected (Alarm LED is RED)

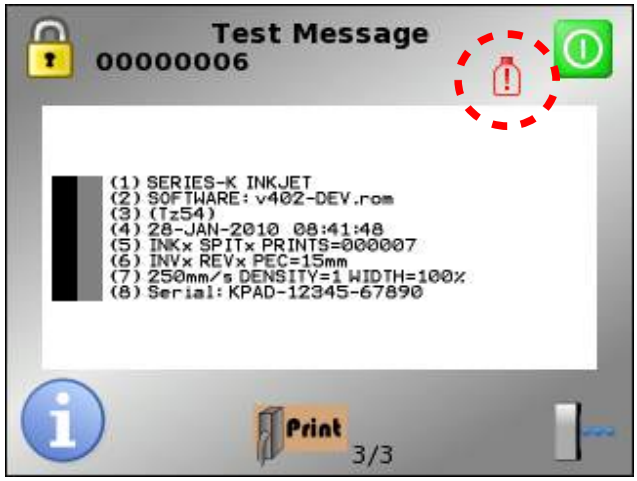


fig. 14: Ink low timeout reached : printing stopped!

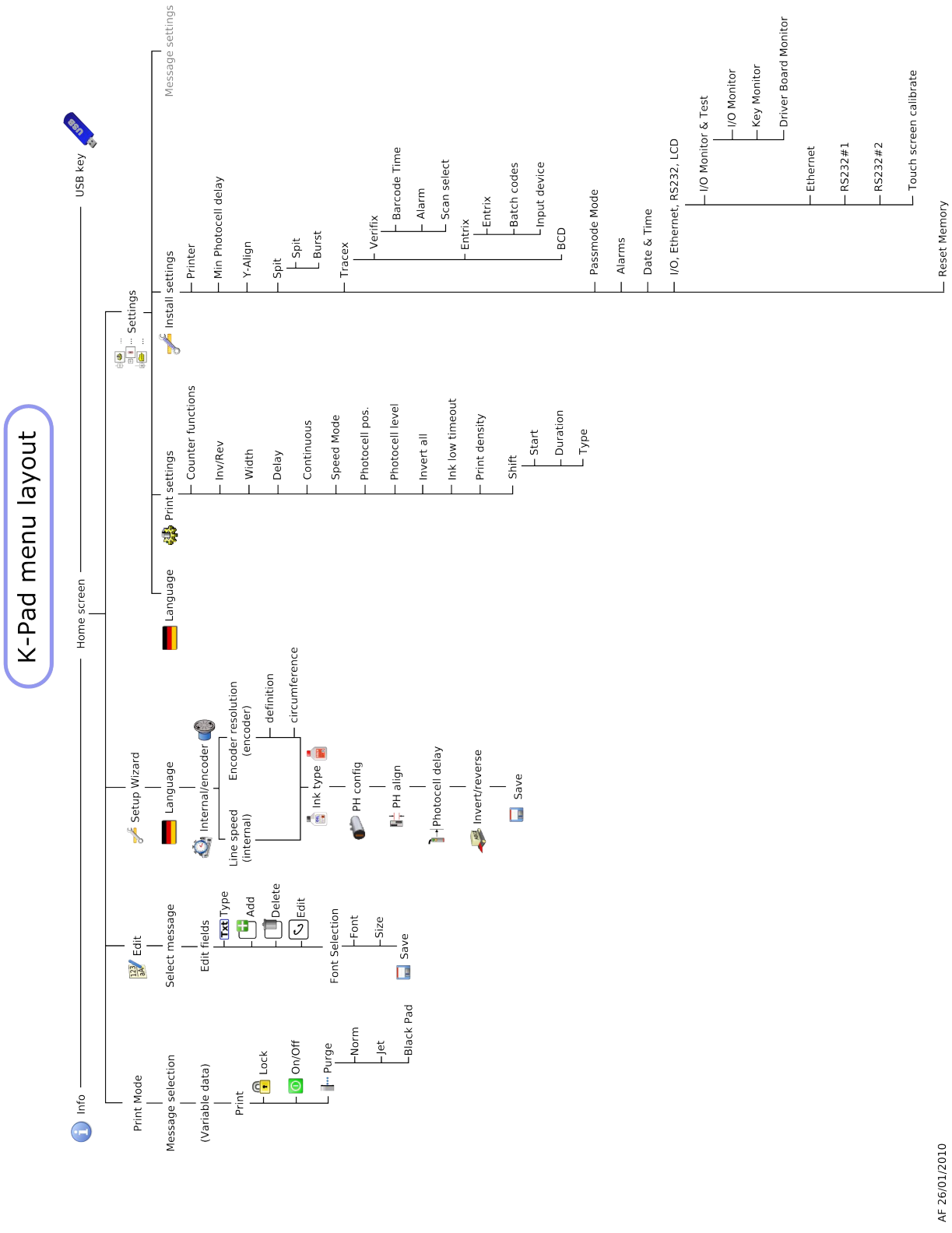


fig. 15: MasterPad menu layout